

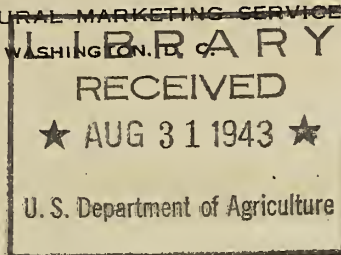
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L2 Scal  
no. 3  
cop. 1

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE



October 9, 1939.

SCALE MEMORANDUM NO. 3

For the information of scale agencies and others concerned in the testing of scales at stockyards posted under the Packers and Stockyards Act.

This memorandum is prepared to assist scale men testing live-stock scales at stockyards posted under the Packers and Stockyards Act to understand and use properly Scale Test Record Form P. & S. 10, on which the data of the tests are to be recorded.

The scales should be tested in the condition in which they have been used and before any changes are made in them, so the test report will show the accuracy of the weights actually obtained in weighing livestock. Our primary interest is in the reports which show the condition of the scales as actually used in buying and selling livestock.

Three copies of the test report should be made; one should be turned over to the local representative of the Packers and Stockyards Division, one is for the stockyards company, and the third is for the scale man or scale-testing agency. At some stockyards the scale reports are made in quadruplicate.

In making a test, all figures and other data of the test should be entered in the form under the proper heading immediately after being obtained.

Under Weather should be recorded the presence of rain, drizzle, snow, dampness, or clear or dry conditions, any of which may affect the weight of the scale platform.

Under Wind is recorded an estimate, such as none, slight, strong, etc. If the wind interferes to the extent that the results of the tests are unreliable they should be discontinued until reliable data can be obtained.

Under Temperature the actual temperature may be recorded but it will be sufficient to record the temperature as very hot, hot, warm, mild, cool, cold, freezing, or very cold.

The other entries to be made in the top of the record sheet should be self-evident.

Column 1, Obs. (Observation), is for numbering each determination step or distinct incident of the test, for identification and reference.

Column 2, Time, is for noting the times at which the test begins and ends and at which certain steps of the test are carried out. Time should be noted whenever the scale is balanced or the balance of the scale is checked for constancy. It should also be noted on the last observation preceding a delay or interruption, as for instance, waiting for weights, or a lunch period, and in the first observation made when the test is resumed.

Column 3, Reading or Ratio (pounds), is for recording the reading of the beam, and, in the old-style scales, for the loose counterpoise weights applied on the tip end of the beam. In beams requiring loose counterpoise weights, the standard weights of the inspector's outfit will be used on the beam as counterpoise weights, and the actual weights applied should be recorded. Any loose counterpoise weights belonging to the scale should be tested as weights against the standards of the testing agency by means of a suitable scaler's balance.

Column 4, Balance, is for noting the character of the balance of the beam produced by the loading recorded in the other columns. Ordinarily, this will be described as center balance and can be indicated by the word "center" or the letter C. When the SR is taken, the balance will be high or low according to the choice made, and the weighing will be recorded as high or low. In the regular test the SR should be determined by changing the weights of the scale platform.

Column 5, Position and Character, is for denoting the nature and position of the test weights on the scale platform. In recording positions consider the sections of the scale as numbered from left to right, the observer standing facing the scale with the beam between him and the platform. The halves of the sections are designated as beam side and far side. In two-section scales there are just four levers for supporting the platform located at the corners and these are numbered 1, 2, 3, 4, beginning with the left-hand far corner as number 1, and then proceeding clockwise around the platform.

Column 6, Test Weights (pounds), is for recording the pounds of test weights applied corresponding to the reading of the beam.

Column 7, Balance Weights (pounds), is for recording the small weights placed on the otherwise empty platform described in Scale Memorandum No. 2, and initially balanced in with the weight of the scale platform. Subsequent to the initial balancing, the balance ball is to remain untouched, and whether the platform is empty or loaded, the beam is to be balanced by changing those small weights.



Column 8, Correction Weights (pounds), is for recording the total number of small weights just referred to required to establish a center balance after the standard test weights have been added. Record also in Column 8 the small weights used on the platform in making a high or low balance in determining the SR.

Column 9, Error (pounds). Record here the errors as determined by the test. They are the values in Column 7 minus the corresponding values in Column 8. These subtractions give the true errors only when the test weights added to the scale platform and recorded in Column 6 are equal to the readings of the beam recorded in Column 3.

Column 10, Remarks, in addition to being used for general remarks is intended to be regularly used for noting the determination of the SR. When space is required for extended remarks, the information can be written across the page, and may be identified by an appropriate serial observation number.

#### Test Report Form Illustrated

The accompanying sample of test record form illustrates its use and will aid scale men in making out the reports. The scale is tested to the capacity at which it is used; that is, 25,000 pounds, the maximum load which is weighed upon it. This subject is discussed in Scale Memorandum No. 1. -

The errors are determined according to the method outlined in Scale Memorandum No. 2. The tolerances applied are given in Scale Memorandum No. 4.

Note that in Obs. 11, 26 pounds is required on the otherwise empty scale platform to balance the beam, when, at the beginning of the test, 25 pounds was required. The balance shift is minus one pound. The platform apparently has lost 1 pound in weight. This 26 pounds is used for determining the errors in the loads which follow. The balance ball is not touched throughout the test.

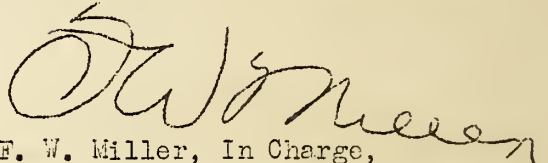
In Obs. 37 a new value for the balance weights is obtained which is used for determining the errors in the data which follow.

There is a progressive change in the balance weights as determined in Obs. 1, 11, 37, and 42, the total change being 11 pounds. This may have come from a drying out of the platform as the test proceeded.

As mentioned in Scale Memorandum No. 1, the proper test and verification of a scale consist in proving that it weighs all loads correctly for all positions they may assume on the scale platform, and that

each individual part which has an independent effect on the indication of the scale must be tested separately in order to establish its individual accuracy. Obs. 38, 39, 40, and 41 show the results of testing each of the four levers which support the platform at the corners.

In four-section scales and in rare instances in three-section scales, in addition to the levers at the corners, the platform is supported by other levers which should also be tested by appropriate concentrations of the test load.

A handwritten signature in dark ink, appearing to read 'F. W. Miller', is written over the typed name.

F. W. Miller, In Charge,  
Administration of Packers and Stockyards Act.

U. S. DEPARTMENT OF AGRICULTURE  
BUREAU OF ANIMAL INDUSTRY  
WASHINGTON, D. C.

## SCALE TEST RECORD FORM

Test by J. Smith  
Witnesses P. Jones

Page 1  
Scale No. 7 Place Union Stockyards, Hill City,  
Test No. 28 Date July 9 1931 Previous test April 9 '31  
Cap. of beam 30,000. lb Commodity Wd. Hogs  
SR zero load 7 lb Full load 11 lb Other load —  
Weather Clearing Wind slight Temperature warm

Obs.	Time	BEAM		TEST LOAD				Error (pounds)	REMARKS
		Reading or Ratio (pounds)	Balance	Position and Character	Test Weights (pounds)	Balance Weights (pounds)	Correction Weights (pounds)		
1	2	3	4	5	6	7	8	9	10
1	10:40	0	Center	—	—	25			Balanced
2		0	low	—	—		18		7 lb SR
3		100.	C	Standard Wts Distributed	100.		24	+ 1	
4		200.	"	"	200.		25	0	
5		300.	"	"	300.		25	0	
6		400.	"	"	400.		26	- 1	
7		600.	"	"	600.		26	- 1	
8		800.	"	"	800.		26	- 1	
9		950.	"	"	950.		27	- 2	
10		1000.	"	"	1000.		27	- 2	
11	10:53	0	"	—	0	26	26	- 1	balance shift
12		1,000.	"	Std. Dist.	1,000.		27	- 1	
13		2,000.	"	"	2,000.		26	0	
14		3,000.	"	"	3,000.		28	- 2	
15		4,000.	"	"	4,000.		27	- 1	
16		5,000.	"	"	5,000.		29	- 3	Platform probably
17		6,000.	"	"	6,000.		29	- 3	drying out
18		7,000.	"	"	7,000.		30	- 4	
19		8,000.	"	"	8,000.		31	- 5	
20		9,000.	"	"	9,000.		31	- 5	
21		10,000.	"	"	10,000.		32	- 6	
22		11,000.	"	"	11,000.		32	- 6	
23		12,000.	"	"	12,000.		33	- 7	
24		13,000.	"	"	13,000.		32	- 6	
25		14,000.	"	"	14,000.		34	- 8	
26		15,000.	"	"	15,000.		34	- 8	
27		16,000.	"	"	16,000.		35	- 9	
28		17,000.	"	"	17,000.		36	- 10	
29		18,000.	"	"	18,000.		36	- 10	
30	11:18	19,000.	"	"	19,000.		36	- 10	

\* Note, balance weights for zero load when reobtained are repeated in column 8







11  
12  
13

14  
15  
16